

WHAT IS CLAIMED IS:

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1. An inputting apparatus, comprising:
a manipulating section upon which a finger
may be placed to manipulate the inputting apparatus,
wherein said manipulating section is
10 configured to tactile-stimulate said finger in place
on said manipulating section upon occurrence of a
predetermined condition.

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2. The inputting apparatus as claimed in
claim 1, wherein the predetermined condition is met
when a pointer which the inputting apparatus is used
20 to control movement of on a display screen is
positioned in a predetermined position on the
display screen.

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3. An inputting apparatus for use with a
pointer on a display screen, comprising:
30 a tilt-enabled manipulating section upon
which a finger may be placed to manipulate the
inputting apparatus;
a signal-producing section configured to
produce a signal in response to a tilt of the
35 manipulating section, which signal causes the
pointer on the display screen to be moved;
wherein said manipulating section includes

a tactile-stimulating device configured to tactile-stimulate said finger when said pointer is in a predetermined position on the display screen.

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4. The inputting apparatus as claimed in claim 3,

10 wherein said signal producing section includes:

a permanent magnet disposed with respect to said manipulating section for tilting movement therewith; and

15 magneto-electric converting elements which detect a change in magnetic field corresponding to tilting movement of said permanent magnet, wherein the signal produced by said signal-producing section is based on said change in magnetic field;

20 wherein said tactile-stimulating device includes:

a tactile-stimulating element moveable between a tactile-stimulating position and a non tactile-stimulating position,

25 the tactile-stimulating element being positioned with respect to the permanent magnet such that an electromagnetic force is generated using the magnetic field formed by said permanent magnet, which electromagnetic force moves said tactile-stimulating element to the tactile-stimulating position.

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5. The inputting apparatus as claimed in claim 3,

wherein said manipulating section includes:

a keytop having an opening therein;

5 a tubular-shaped holder held to a lower side of said keytop;

wherein said signal-producing section includes:

10 a permanent magnet disposed at a bottom portion of said manipulating section for tilting movement therewith; and

magneto-electric converting elements which detect a change in magnetic field corresponding to tilting movement of said permanent magnet, wherein the signal produced by said signal-producing section
15 is based on said change in magnetic field;

wherein said tactile-stimulating device includes a tactile-stimulating element disposed for movement within said holder between a tactile-stimulating position and a non tactile-stimulating
20 position, which tactile-stimulating element includes a coil and a projecting member positioned with respect to an upper side of said coil, a portion of said projecting member projecting from said opening when the tactile-stimulating element is in the
25 tactile-stimulating position;

wherein delivery of a first drive current to said coil generates a first electromagnetic force using the magnetic field formed by said permanent magnet, which electromagnetic force moves said
30 tactile-stimulating element away from the permanent magnet.

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6. The inputting apparatus as claimed in claim 5,

wherein delivery of a second drive current in a direction reverse to said first drive current generates a second electromagnetic force directed towards said permanent magnet, which electromagnetic force moves said tactile-stimulating element towards the permanent magnet.

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7. The inputting apparatus as claimed in claim 3,

wherein said manipulating section includes:

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a keytop having an opening therein;
a tubular-shaped holder held to a lower side of said keytop;

wherein said signal-producing section includes:

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a permanent magnet disposed at a bottom portion of said manipulating section for tilting movement therewith; and

magneto-electric converting elements which detect a change in magnetic field corresponding to tilting movement of said permanent magnet, wherein the signal produced by said signal-producing section is based on said change in magnetic field;

wherein said tactile-stimulating device includes a tactile-stimulating element for movement within said holder with respect to a top face of said permanent magnet, which tactile-stimulating element includes a coil and a projecting member positioned with respect to an upper side of said coil, a portion of said projecting member projecting from said opening when the tactile-stimulating element is along the top face of said permanent magnet;

wherein delivery of a first drive current to said coil generates a first electromagnetic force using the magnetic field formed by said permanent magnet, which electromagnetic force moves said tactile-stimulating element to said top face of said permanent magnet.

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8. The inputting apparatus as claimed in claim 4,

wherein said tactile-stimulating element is a keytop itself.

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9. A manipulating apparatus which incorporates thereinto the inputting apparatus as claimed in claim 1.

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10. A manipulating apparatus which incorporates thereinto the inputting apparatus as claimed in claim 3.

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11. A manipulating apparatus which incorporates thereinto the inputting apparatus as claimed in claim 4.

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12. A manipulating apparatus which
incorporates therein the inputting apparatus as
5 claimed in claim 5.

10 13. A manipulating apparatus which
incorporates therein the inputting apparatus as
claimed in claim 6.

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14. A manipulating apparatus which
incorporates therein the inputting apparatus as
claimed in claim 7.
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15. A manipulating apparatus which
25 incorporates therein the inputting apparatus as
claimed in claim 8.

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